Remarks/Arguments

Please note that this response has been submitted along with a Revocation and Power of Attorney separately signed by both inventors.

Claims 1-18 have been cancelled. New claims 19-32 have been added in order to more definitely claim the invention.

Additionally, these new claims include limitations not found in the prior art. For example, the Examiner has yet to show any reference having two groups of discretely sized pores. The Examiner, instead, relies on a references showing substantially uniform group of large-size pores. The Examiner has also failed to show any reference disclosing a PTFE article comprising an arrangement where long fibrils interconnect two nodes, and short fibrils interconnect a third node between the two nodes. The claimed process of the present invention has also not been shown.

The Examiner contends that U.S. Patent No. 5,102,921 issued to Harada et al. anticipates or makes obvious the invention because the reference discloses the same process. This conclusion reached is incorrect both factually and legally.

Legally, the examiner's rejections are incorrect because the cited MPEP sections 2113 and 2112.01 do not apply. MPEP 2113 applies to product-by-process claims. None of the claims present in the application are product-by-process claims. Therefore, MPEP 2113 does not apply.

MPEP 2112.01 is equally inapplicable. The Examiner suggests that the Harada process is the same as the process of the present invention, and thus, an inference may be made that the two resulting articles are the same. This is incorrect. The Harada manufacturing steps are significantly different.

One difference between the two processes regards the claimed expansion step. Harada discloses a relatively cooler stretching step. With the Harada process, temperatures are not elevated to or near the crystalline melt temperature of the PTFE. Instead, Harada performs a standard-low-temperature stretch. There is some heating involved, but only to the point of causing coalescence of the PTFE. Not any melting.

The reference itself recommends against melting. At one place in the Harada disclosure, it is suggested that the stretching be done at sub-sintering temperatures. See Col. 2, lines 21-27; Col. 3, lines 25-33; Col. 4, lines 55-57. This suggests stretch temperatures should be maintained at significantly lower than the crystalline melt temperature of PTFE. Sintering is the heating of the article at a temperature below its melt point. See The American Heritage Dictionary (1985). Harada recommends sub-melt-point temperatures. One skilled in the art will recognize that this creates mere thermo/mechanical coalescence rather than any molecularly significant transformation.

Other parts of the Harada specification also show this. For example, all of the specific Harada stretch temperatures disclosed are significantly below the melt point of PTFE (even below sintering temperatures). Of the examples disclosed, the absolute warmest is 330° C. This temperature may be substantially different quantitatively from the 350° C expansion temperature of the present invention, but this temperature difference is even more dramatically different in terms of its effects on the resulting article.

The process of the present invention, however, pushes the temperatures significantly into the melt range of the PTFE – to about the crystalline melt point. The article is then stretched at this temperature (to about 350° C). Because these temperatures are proximate the crystalline melt point, substantial molecular diffusion occurs. This significant molecular

diffusion coupled with expansion contributes the uniqueness of the process and article of the present invention. One skilled in the art will recognize that even minor temperature, as well as other environmental changes made during the expansion process can have significant impact on the configuration of the resulting article.

Other differences between the Harada steps and those of the present invention exist. For example, Harada, three of the examples involve performing multiple stretches at different temperatures at a variety of degrees. None of the processes in the examples are substantially similar to applicants.

Because the stretch temperatures, and other steps in the two processes are different, the Examiner's factual premise on which his rejections are supported – that the processes are the same thus the products must therefore be the same – fails.

But the results of the process described are much different than those here as well. The Harada resulting article has at least roughly uniform pore sizes. The reference makes no mention of two groups of discretely sized pores. It, instead, suggests that a substantially uniform group of large-size pores is formed. The reference also fails to show a resulting article comprising an arrangement where long fibrils interconnect two nodes, and short fibrils interconnect a third node between the two nodes. These claimed features are simply not shown. The discrete pore groups created by the unique fibril configurations of the claimed invention are a unique result which would certainly have been mentioned if existent in Harada.

These process and result differences should not be surprising considering the starkly different goals in Harada. Harada was faced with the problem of developing a PTFE material having a relatively large pore diameter. This large diameter material is ideal for use in air filters because it diminishes pressure losses, thus reducing demands on the filtration systems.

See Col. 1, lines 22-30 and Col. 8, lines 50-58 of Harada. Its use in high-speed coax cable sheathing makes ultra-high-speed transmission feasible. Id. The sole goal is to increase pore size for these industrial applications.

The objectives of the present invention, however, are more complex. The present invention is used in the medical field as an implant. More specifically as a vascular graft. There was a need in the art for an article with better blood-contact properties while maintaining necessary strength. The unique mosaic pore structure of the present invention – including two discrete pore size groups – has accomplished these objectives.

There is nothing in Harada that suggests any applicable medical application.

Because the Examiner has failed to show all the claimed limitations it is respectfully suggested that the Examiner's rejections should be withdrawn, and this application passed on to issue. Applicant does not believe that any fee is due with this amendment. However, if Applicant is mistaken, the Commissioner is authorized to deduct any required fee from Deposit Account 19-2112. If the Examiner has any questions concerning this case, he is encouraged to contact the undersigned at the number below.

Respectfully submitted,

Marshall S. Honeyman
Reg. No. 48,114

MSH/tjd

SHOOK, HARDY & BACON L.L.P.
2555 Grand Blvd.
Kansas City, MO 64108-2613
(816) 474-6550, ext. 16037

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL AMOUNT REQUIRED, OR CREDIT ANY OVERPAYMENT, TO ACCOUNT NO. 19-2112.

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